JAPAN

EDICT OF GOVERNMENT

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JIS B 6547 (1991) (English): Roller dryer -- Test and inspection methods

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The citizens of a nation must honor the laws of the land.

Fukuzawa Yukichi

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JIS

JAPANESE INDUSTRIAL STANDARD

Roller dryer — Test and inspection methods

JIS B 6547—1991

Translated and Published

by

Japanese Standards Association

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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JAPANESE INDUSTRIAL STANDARD J I S

Roller dryer-Test and inspection methods B 6547-1991

1. Scope

This Japanese Industrial Standard specifies the construction, nominal sizes, functional tests, running tests, and methods of inspection on accuracies and on machining accuracies for the veneer roller dryers of not less than 2750 mm up to not more than 4850 mm in roll length(1), not less than 2 stages and not less than 3 heating sections(2).

Notes (1) This means the length of roll of the heating section.

(2) The length of the heating section shall generally be 1600 to 2600 mm.

Remarks 1. The applicable standard to this Standard is as given in the following:

JIS B 6521-Methods of measurement for noise emitted by wood working machinery

2. In this Standard, units given in { } are in accordance with the traditional units and are appended for informative reference.

2. Construction

Taking thermal deformations into consideration, the respective parts of the roller dryer shall be those having sufficient rigidity respectively so that inflicting no ill influence on the machining accuracies.

3. Nominal sizes

The nominal sizes of the roller dryers shall be in accordance with Table 1, being expressed by the lengths (mm) of roll.

Table 1. Nominal sizes

Unit: mm

Nominal size	Length of roll	
	Dimension	Tolerances
2 750	2 750	±10
3 050	3 050	±20
3 350	3 350	
3 650	3 650	
3 950	3 950	
4 250	4 250	±30
4 550	4 550	
4 750	4 750	
4 850	4 850	

Remarks: The roller dryer shall be designated by the name, nominal size, number of stages and number of heating sections.

Example: Roller dryer 4550 x 4 x 9

4. Methods for functional tests

The functional tests of the roller dryers shall be in accordance with Table 2.

Table 2. Functional tests

No.	Test item	Testing method
1	Electric equipment	Before and after the running test, examine insulating condition once each.
2	Feeding equipment	Examine the reliability and smoothness of the function and the correctness of indication.
3	Feed of workpiece	Examine the reliability and smoothness of the function.
4	Blower equipment	Examine the smoothness of the function.
5	Heating equipment	Examine the reliabilities of functions such as the valve and the trap.
6	Heat insulating equipment	Examine the reliability of the function and the leakage of the hot air.
7	Suction-exhaust equipment	Examine the smoothness of the function.

Table 2 (Continued)

No.	Test item	Testing method
8	Safety devices	Examine the reliabilities of safety functions for operators and of mechanical protecting functions.
9	Lubricating device	Examine the smoothness and reliability of the function.
10	Accessories	Examine the reliabilities of functions.

Remarks: For a roller dryer which is not provided with any one of the foregoing functions, the test item corresponding to this in Table 2 shall be omitted.

5. Methods of running test

After the interior of machine has reached the working temperature(3), measure required electric power and noise at the working feed rate(3), record respective matters specified in Table 3 Recording Form 1, as well as observe abnormal vibrations by the sense of touch.

Furthermore, the measurement of the noise shall be in accordance with JIS B 6521.

Note (3) The working temperature and the working feed rate shall be determined upon agreement between the parties concerned.

Table 3. Recording Form 1

No.	Time of measurement o'clock, min	Working temperature °C	Working feed rate m/s	Blower						Heating equipment							Required electric power					Noise A-weighted dB	Room temperature °C	Description
				Heating			Cooling			Steam		Others		Opening degree of exhaust hole	Temperature of heating section(4) °C		Voltage V	Current A			Input kW			
				Air quantity m³/min	Air pressure Pa or {mm Aq}	Bearing temperature °C	Air quantity m³/min	Air pressure Pa or {mm Aq}	Bearing temperature °C	Pressure MPa or {kgf/cm²}	Consumption kg/h	Name of fuel	Consumption		Left	Right		Conveying equipment	Heating blower	Cooling blower				

Note (4) The measuring positions of the heating section temperature shall be about 300 mm inside from the end face of the roll.

Remarks: Regarding the measuring conditions of the noise, these shall be recorded in the description column.

6. Methods of inspection on accuracies

The inspection on accuracies of the roller dryer shall be in accordance with Table 4.

Table 4. Inspection on accuracies

Unit: mm

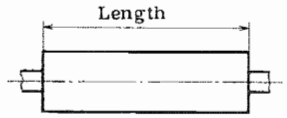
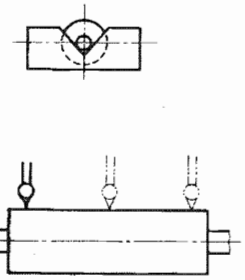
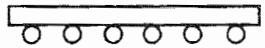
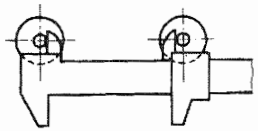
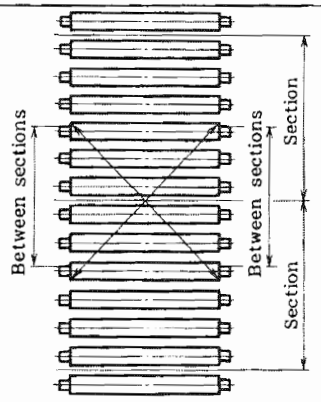
No.	Inspection item	Measuring method	Figure for measuring method	Tolerance	
1	Reciprocal variation on lengths of rolls	Apply a steel tape in parallel to each roll, measure the length of the roll, and consider the maximum difference of readings to be the measured value.		3	
2	Run-out of roll	Apply a test indicator to a roll which has been supported at both ends as given in figure, rotate the roll manually, and consider the maximum difference of readings during rotation to be the measured value. In this case, measure at least three places of the center and both ends of the roll.		Roll length	
				3350 max.	Exceeding 3350
				1.0	1.5

Table 4 (Continued)

Unit: mm

No.	Inspection item		Measuring method	Figure for measuring method	Tolerance	
3	Flatness of lower rolls of each stage		Apply a straightedge onto an arbitrary 6 pieces and over of the lower rolls in the feed direction, and measure the clearance between the rolls and the straightedge by means of a clearance gauge. Carry out these measurements at vicinity of both ends of respective rollers, and consider its maximum value to be the measured value.		1.5	2.0
4	Parallelism of roll shafts	Between rolls	Measure the interval of both ends of neighbouring roll shafts by vernier callipers, and consider the maximum value of difference of readings to be the measured value([5])		1	
		Between sections	Measure the intervals between about the center of an arbitrary section and the roll shaft at about center of the neighbouring sections, and the diagonal lengths, with a steel tape, and consider the differences of respective readings to be the measured values([5]).		For interval between roll shafts 3 For diagonal lengths 5	

Note ([5]) This measurement shall be carried, pushing the roll shafts towards the feeding direction.

Remarks: The maximum difference is defined as the difference between the maximum value and the minimum value obtained by means of a designated measuring method.

7. Methods of inspection on machining accuracies

The inspection on machining accuracies of the roller dryer shall be in accordance with Table 5.

Table 5

No.	Inspection item	Measuring method	Tolerance
1	Dispersion of moisture content rates in finished products	Placing veneers([6]) on respective positions of the center and both ends of respective stages([7]), dry not less than 10 sheets respectively, after leaving for 2 h measure the moisture content rates at 3 points of the center and both ends on the diagonals of the veneers, and express by the ratio of the minimum to the maximum of the mean values at respective positions with respect to the total mean value.	0.25
2	Cracking	Dry veneers([6]) of medium quality not less than 10 sheets on respective stages([7]), and express in the ratio of total lengths of crackings after drying to before drying.	1.5

Notes ([6]) The veneers to be tested shall be the surface boards of approximately 1 m x 2 m of the same kind of tree under similar conditions, and these shall not be reinforced in the inspection on crackings.

([7]) For the roller dryer of not less than 3 stages, these shall be the upper and lower stages and one stage of the center part.

Remarks: The veneers to be tested shall be inserted under the normal working conditions.

B 6547-1991
Edition 1

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